

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE
OF BACHELOR OF SCIENCE IN ANIMAL SCIENCE

RE-SIT/ SPECIAL EXAMINATION

ANSC 372: DESIGN AND ANALYSIS OF ANIMAL EXPERIMENTS

STREAMS: BSC (ANSC)

TIME: 2 HOURS

DAY/DATE: MONDAY 16/11/2020

2.30 P.M. – 4.30 P.M.

Instructions:

- i. Attempt ALL questions
- ii. Show your working.
- iii. Use of mobile phones as calculators is NOT allowed.

1. The following data relates to birth weight in lambs. It is known that birth weight in lambs is normally distributed. Use the data to construct a 95% confidence interval for the population mean. [15 marks]

2.	5.0	3.0	4.0	2.5	3.5	3.0	4.0	5.0	4.0
5									
3.	3.5	3.0	2.5	3.0	3.0	3.0	4.5	4.0	3.5
5									
4.	3.5	2.5	5.0	4.5	4.0	4.0	3.0	2.5	3.5
5									

2. Use the provided information to test the hypotheses below. . [5 marks]

3. Use the information below to construct a 95% confidence interval for the mean.

[5

marks]

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4. Use the data provided to answer the question below. [5 marks]

Sample 1	Sample 2
$n_1 = 12$	$n_2 = 12$
$= 26.58$	$= 39.67$
$= 14.36$	$= 13.86$

Test the following hypothesis. Use $\alpha = .05$.

5. Use a t-test to compare whether the data shown below is from the same population. Use $\alpha = .05$. [20

marks]

Before	23	8	15	10	2	10	11	2	7	6
After	6	4	8	3	1	7	10	2	11	10

6. Using the Wilcoxon Sum Rank Test to determine at $\alpha = .05$ whether there is sufficient evidence that population is shifted from population B. [20 marks]

Population A	8	8	7	5	9	10	10	10
Population B	9	7	6	7	13	10	11	13

7. A study was conducted to compare the effects of two diets on milk yield in Holstein Friesian cattle. 6 cows in the same stage of their 1st lactation were used in the experiment. The cows were first fed on the diets for 2 weeks to so as to adjust to the new feed and data was collected in the 3rd week. A two weeks period was allowed after the first diet before the cows were fed the second diet. Below is the data on milk yield (in kg) for each diet.

Cow	1	2	3	4	5	6
Diet 1	11.	12.7	13.2	12.	11.5	11.8
	7			3		
Diet 2	14.	14.7	15.5	13.	15.0	11.8
	1			9		

Use the data to test the hypotheses , with .

Use .

